

D² The invention also relates to a procedure for manufacturing the magnetic circuit for the electric machine included in the synchronous compensator plant. The procedure entails the winding being placed in the slots by threading the cable through the cylindrical openings in the slots.

Since the insulation system, suitably permanent, is designed so that from the thermal and electrical point of view it is dimensioned for over 36 kV, the plant can be connected to high-voltage power networks without any intermediate step-up transformer, thereby achieving the advantages referred to above.

D³ Figure 2 shows a schematic axial end view of a sector of the stator in an electric machine in the synchronous compensator plant according to the invention,

Figure 3 shows an end view, step-stripped, of a cable used in the winding of the stator according to Figure 2, and

Figure 4 is a schematic illustration of a three-phase synchronous compensator plant in accordance with the present invention.

D⁴ In the schematic axial view through a sector of the stator 1 according to Figure 2, pertaining to the electric machine included in the synchronous compensator plant, the rotor 2 of the machine is also indicated. The stator 1 is composed in conventional manner of a laminated core 1'. Figure 1 shows a sector of the machine corresponding to one pole pitch. From a yoke part 3 of the core situated radially outermost, a number of teeth 4 extend radially

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in towards the rotor 2 and are separated by slots 5 in which the stator winding is arranged.

Cables 6 forming this stator winding, are high-voltage cables which may be of substantially the same type as those used for power distribution, i.e. PEX cables. One difference is that the outer, mechanically-protective sheath, and the metal screen normally surrounding such power distribution cables are eliminated so that the cable for the present application comprises only the conductor and at least one semiconducting layer on each side of an insulating layer. Thus, the semiconducting layer which is sensitive to mechanical damage lies naked on the surface of the cable.

Page 12, line 39 through page 13, line 15, as amended:

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Figure 3 shows a step-wise stripped end view of a high-voltage cable for use in an electric machine according to the present invention. The high-voltage cable 6 comprises one or more conductors 31, each of which comprises a number of strands 36 which together give a circular cross section of copper (Cu), for instance. These conductors 31 are arranged in the middle of the high-voltage cable 6 and in the shown embodiment each is surrounded by a part insulation 35. However, it is feasible for the part insulation 35 to be omitted on one of the four conductors 31. The number of conductors 31 need not, of course, be restricted to four, but may be more or less. The conductors 31 are together surrounded by a first semiconducting layer 32. Around this first semiconducting layer 32 is an insulating layer 33, e.g. PEX insulation, which is in turn surrounded by a second semiconducting layer 34. Thus the concept "high-voltage cable" in this application need not include any metallic screen or outer sheath of the type that normally surrounds such a cable for power distribution.

In accordance with the present invention, the synchronous compensation plant of the invention provides quadrature-axis synchronous reactance which is considerably less than the